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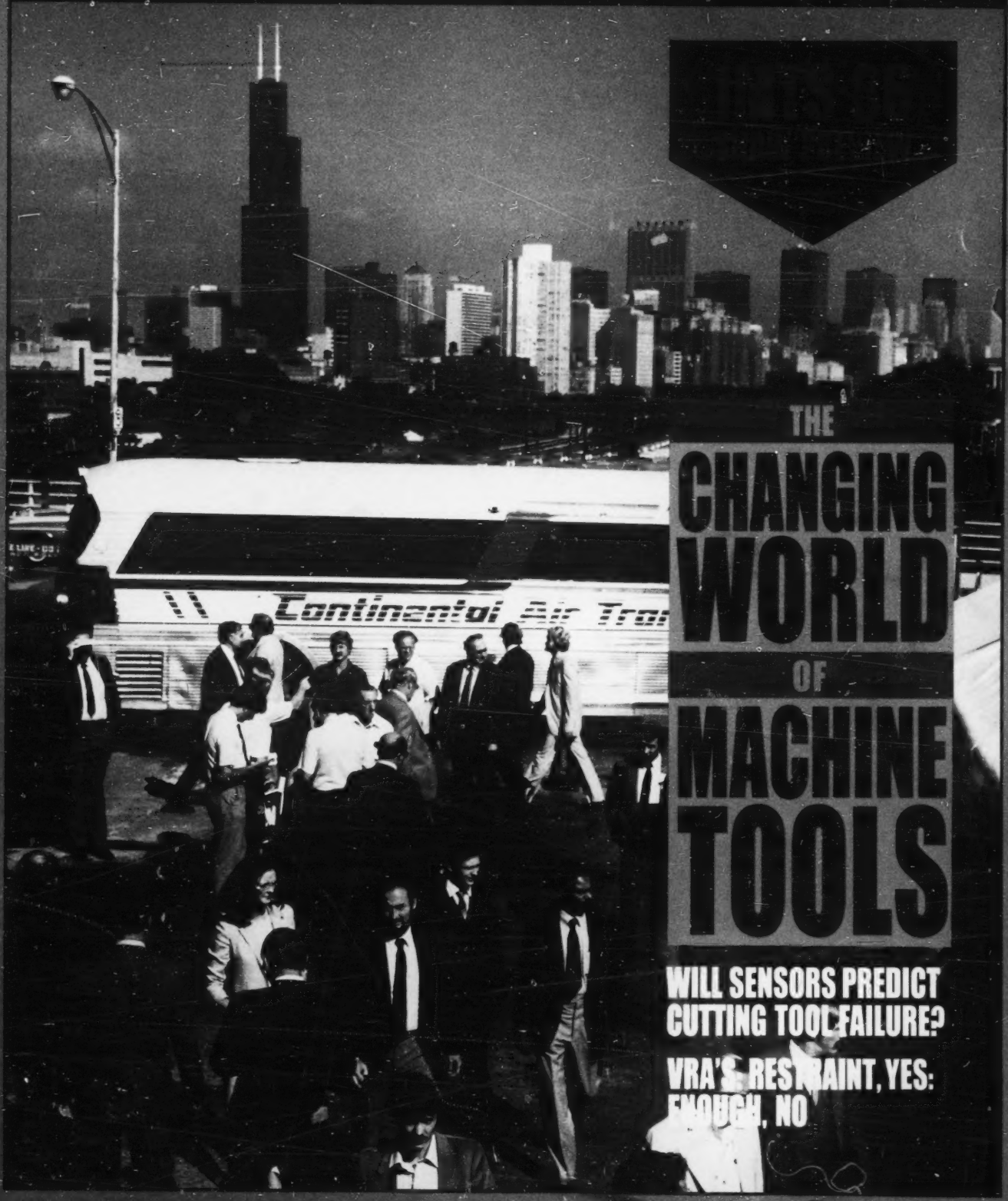
IRON AGE

AUGUST 18, 1986

MANUFACTURING MANAGEMENT



THE CHANGING WORLD OF MACHINE TOOLS

WILL SENSORS PREDICT CUTTING TOOL FAILURE?

VRA'S: RESTRAINT, YES: ENOUGH, NO

AUGUST 15, 1986 VOL. 229, NO. 16

IRON AGE
MANUFACTURING MANAGEMENT

Editorial 7
If only the President would show up.

Newswatch 11
Union leaders are prodding the Senate to pass a trade bill.

You and Your Job 24
Today's secretary: The coffee pot is on the back burner.

International Machine Tool Show 33
IMTS-86 will focus on the changing world of machine tools.

Sensing Devices 50
Sensors to predict machine failures are not yet available.

Voluntary Restraints 57
President Reagan's import restraints are a failure, critics say.

Westinghouse 71
Service has emerged as the company's top activity.

Technically Speaking 91
Lasers scribe lines for integrated circuits.

Materials Report 93
Is price cutting ruining the steel industry?

Price Trends 108
Prices continue on their journey to nowhere.

Next Issue: Manufacturing's New Glamour Materials.

Departments

EDITORIAL STAFF	8
LETTERS	8
INDUSTRIAL BRIEFS	26
IMTS-86 PRODUCTS PREVIEW	79
FYI	98
MANAGEMENT SERVICE CARD	99
AD INDEX	101
BUSINESS STAFF	101
P&P DATA 7/28	102
FERROUS SCRAP 7/28	104
CLEARING HOUSE	106

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NEWSWATCH

Unions lobbying Senate for passage of trade bill

Trade unions have seized on the massive U.S. trade deficit for a final lobbying blitz of the Senate for a protectionist trade bill.

The House overwhelmingly passed a tough trade bill this Spring that would protect U.S. industries such as steel and machine tools from heavy competition from imports. Since then, President Reagan swore to veto it, and the lobbying push shifted to the Senate, which may bow to pressure and pass a trade bill of its own this year.

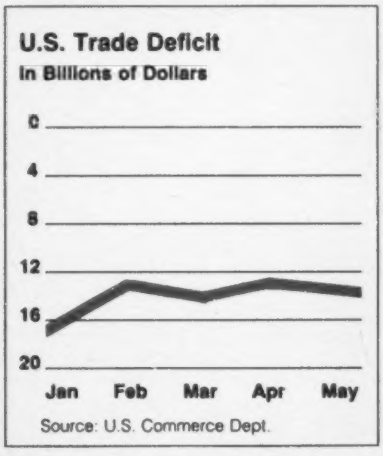
The AFL-CIO noted last month that the country's trade deficit soared to $14.2 billion in May—up 10 pct from the previous month. And, its officials noted, the $71.9 billion trade deficit for the first five months of this year was 25.5 pct over the deficit for the first five months of 1985.

In particular, the AFL-CIO noted that May's manufacturing deficit was $11.6 billion. That worked out to a shortfall in manufactured goods of $56.1 billion for the first five months of this year—28.7 pct above the $43.6 billion recorded in the same period in 1985.

AFL-CIO Research Director Rudy Oswald said of the situation in the Senate, "The time for stalling is over. The time for action is clearly here. The Administration's policy of 'open markets' and 'free trade' is bankrupt. There is no way the President can continue to pretend that everything is going to come up roses."

Mr. Oswald continued, "The trade deficit is a growing menace to the national economy, to the jobs of American workers and to the survival of American industry. The Administration cannot wish the problem away. Because it won't act, the Congress must. It has to come to grips with this issue before it's too late."

Hard pressed manufacturers and unions also got a boost in the Senate from an unexpected source: the reaction of key Senate leaders to a report from the U.S. Commerce Department that the U.S. recorded its first farm trade deficit in 27 years in May. Many Senate Republican leaders, like Majority Leader Robert Dole (R-Kan.) come from hard-hit farm states. And, some of those politicians are up for reelection this year.



And, if the Senate passes a bill similar to the House measure, it would also provide trade protection for U.S. agricultural interests. Sen. Dole said, "If nothing is done to increase agricultural exports within the next two or three months, I expect pressures could build up to such a level in Congress that some legislative action will be taken."

He was joined by Sen. Robert Byrd (D-W.Va.) the Senate Minority Leader, who said, "The Administration may believe that a deficit in agricultural trade is acceptable, but I am sure that American farmers, suffering from a neglected trade policy, do not."

The May trade figures that sparked these actions show quickly widening trade gaps with some nations that are major steel exporters to the U.S. For example, the deficit with Japan widened to $4.99 billion in May from April's $4.7 billion. The deficit with Canada rose from $1.8 billion to $2.18 billion, and imports from Taiwan in May rose to $1.2 billion—up $200 million from the previous month.

U.S. trade restraints displease Europe's machine tool builders

Indignation greeted President Reagan's call for voluntary restraint on machine tool imports from Switzerland and West Germany.

"I can't imagine us limiting our exports to the U.S.," said a project manager of the Swiss company, Reishauer (Zurich). "I would have thought our exports to the U.S. are negligible in terms of the total exports from countries like Japan and Taiwan."

"Our North American exports are not significant as regards our total exports," Leif Lundkvist, chairman of Deckel A.G., Munich, West Germany, told **Iron Age**, during "Metav." the West German machine tool show held in Duesseldorf in June. "The U.S. machine tool builders ought to concern themselves more with rebuilding their exports. We have recorded significant market penetration in the U.S. because our universal milling approach to mold and die milling, reduces subsequent grinding costs, when com-

pared with the traditional milling approach practiced in the U.S. and Britain."

Wolfgang Freese, Deckel's company secretary, said: "We never look to restrain our exports. Any kind of trade restriction is very detrimental to business—if machine tool companies need protectionist measures, they are unable to compete."

Rudiger Karau, marketing manager of Werner & Kolb Werkzeugmaschinen GmbH, Berlin, commented: "Big U.S. corporations buy standalone machine tools. There is no incentive for our U.S. competitors to develop a 'Hi-tech' systems capability."

He referred to two major Werner contracts in the U.S.—one for a $1 million-plus FMS-type system based on machining centers for a Texas Instruments plant in California. The other, valued at $1.5 million, is going to Fuller at Denver, Col. The company intends exhibiting a $1 million machining system at the IMTS-86.

U.S. Machine Tool Imports
Pct Share of Total Imports

	1984	1985
W. Germany	16.3	15.2
Switzerland	6.0	5.9
Taiwan	6.2	7.2
Japan	45.8	46.2

Source: W. German MTBA

Dr. Axel Kemna, chairman of Gildemeister, labeled the actions a political move on the part of the Reagan Administration. "It's not a practical move," he explained "particularly since the U.S.'s own turning machine industry has almost gone. The U.S. market sources lathes in Japan, West Germany and Switzerland. Everyone in the machine tool industry understands that President Reagan had to say something. In practice, it's not realistic."

Dr. Gutmann Habig, head of economics and statistics for the West German Machine Tool Builders' Association, expressed astonishment at Presidsent Reagan's call for voluntary restraint. "German machine tools have made a historical, steady and undisturbed development," he said. "We don't threaten the security of the U.S. Nor are we causing any difficulties to the U.S. machine tool industry. You could hardly say our supply volume has had a turbulent effect."

European companies are having second thoughts about FMS

"Some European companies have had some bad experience with flexible manufacturing systems (FMS)," Dr. Axel Kemna, new chairman of the West German Gildemeister Group, told **Iron Age** in London recently.

"The trend in West Germany is definitely back to cells, rather than big systems. Small and large companies have had tremendous problems," he added. "The trend is to stay with cells and link them, step-by-step, into systems."

Asked to elaborate on FMS problems, Dr. Kemna said: "Some companies had bad experiences. The FMS got out of administration control. They lost track of what they had bought, while the supplier lost track of what it had supplied! Now, there is more realism behind the 'step-by-step' trend.'

Although the turning divisions of Gildemeister has installed some 120 flexible manufacturing turning cells (FMTCs) in Western Europe, the company has only supplied standalone CNC turning centers to the U.S. market. "They like their machine-to-machine, standalone operation," said Dr. Kemna about U.S. machine shop practices. "The U.S. market has not developed towards FMTCs like Europe, except for the larger companies taking FMS."

Dr. Kemna chairs a profitable Gildemeister Group, headquartered in West Germany. In the fiscal year, 1985-86, the company built more than 1,000 CNC lathes. Turnover reached DM 650 million ($300 million). Order intake is 25 pct up on budget.

When asked about Japanese penetration into West German CNC turning markets, Dr. Kemna said it had reached 30 pct in 1980, but had firmly been pushed back to 20 pct by 1986. "We meet them on price and performance," he said. "We developed the NEFTC CNC lathe series specifically to meet Japanese competition. But while we are working at full capacity, they can beat us on delivery."

The smaller West German machine builders, companies with about 100 employees, apparently plowed profits back into product and facility development to meet Japanese competition. "These owners were content just to draw salaries," said Dr. Kemna.

If the West German machine tool industry had followed U.S./U.K. accounting practices, he said, the industry would never have recovered. "That's the strength of the German machine tool manufacturer," he said, "we did not make the 'fast' buck."

GE and Fanuc team up in factory automation market

General Electric Co. has found a Japanese partner to help it improve its competitive posture in the factory automation marketplace.

GE and Fanuc, Ltd., have reached agreement in principle to establish a new company, which will be called GE Fanuc Automation Corp. Each partner will own 50 pct of the company. Initial capitalization will be $200 million.

According to a GE spokes-person, the new company will help GE further expand its U.S. factory automation business into European and Asian markets.

For Fanuc, the joint venture is another step in its expanding role as a major supplier of factory automation products and services. In 1982, Fanuc set up a joint venture

PRICE & PRODUCTION DATA

(Effective July 28,1986)

Steel production by districts, thousands of tons (000 omitted)

	Last Week	Two Weeks Ago	Month Ago	Year Ago
Northeast Coast	174	172	169	162
Pittsburgh	188	192	205	179
Youngstown	93	96	98	88
Lake Erie	79	84	88	121
Detroit	133	144	145	164
Chicago	388	412	408	451
Midwest	164	167	170	161
Southern	160	168	183	212
Western	82	80	84	92
U.S. Production	1,461	1,515	1,550	1,630

Source: American Iron & Steel Institute

Lake Superior Ore Prices

51.50% Fe Natural delivered lower Lake ports unless otherwise stated. Rail transportation, handling and unloading may be charged to buyer. Coarse ore 80¢ premium.

Pellets (per iron unit natural) ..... gross-ton 58.0*
Pellets (per iron unit natural) ..... gross-ton 59.4**
Pellets (per iron unit natural) ..... gross-ton 72.5-86.9***
Mesabi, regular-unscreened ..... gross-ton $32.53
Mesabi, non-bessemer ..... gross-ton $30.03-31.53

*58.0¢–Mineral Services, 8 13 85. **59.4¢–Inland Steel Mining, 1 1 85 and Pickands Mather, 8 1 85, delivered hold of vessel, upper Lake ports. ***72.5¢–U.S.Steel, 8 16 85. 86.9¢–Oglebay Norton 3 25 82; Hanna Mining and Cleveland-Cliffs 2 26 82.

STEEL PRODUCTION, COMPOSITE PRICES

(Effective July 28,1986)

U.S. Steel Production	Last Week	Two Weeks Ago	To Date 1986	To Date 1985
Net tons, in thousands	1,461	1,515	50,394	50,740
Capability Utilization Rate	60.3	62.5	68.8	66.7

Composite Prices	This Week	Week Ago	Month Ago	Year Ago
Finished Steel Base* (¢/lb.—eff. 5/19/86)	24.850	24.850	24.850	27.582
Pig Iron** (Net ton = 2000 lbs.)	$213.00	$213.00	$213.00	$213.00
Scrap No. 1 hvy.*** (Gross ton = 2240 lbs.)	$ 72.17	$ 71.83	$ 71.17	$ 71.17
No. 2 bundles	$ 52.50	$ 52.50	$ 52.17	$ 51.17

Scrap Comparison (Gross Ton)

No. 1 steel, Pittsburgh	$ 72.50	$ 71.50	$ 70.50	$ 77.50
No. 1 steel, Philadelphia	72.50	72.50	71.50	72.50
No. 1 steel, Chicago	71.50	71.50	71.50	63.50
No. 1 bundles, Detroit	67.50	66.50	62.50	69.50
Low Phos., Youngstown	71.50	71.50	71.50	57.50
No. 1 mach'y cast., Pgh	74.50	74.50	73.50	71.50
No. 1 mach'y cast., Phila	93.50	93.50	93.50	91.50
No. 1 mach'y cast., Chi	105.50	105.50	105.50	99.50

*Finished Steel Composite: Weighted index of steel bars, shapes, plates, wire, rails, black pipe, hot and cold rolled sheets and strips.
**Pig Iron Composite: Based on average prices for basic and foundry pig iron at representative producing points within the U.S.
***Steel Scrap Composite: Average of No. 1 hvy. melting steel scrap and No. 2 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

NONFERROUS PRICES

(Effective July 28,1986) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated.

Primary Metal Prices

(cents per lb.)	current price	last price	date of change
Aluminum (LME)	51.13	50.17	7/28/86
Copper (C)	62.50-64.00	62.00-64.00	7/24/86
Lead	21.00-24.00	22.00-24.00	7/ 9/86
Magnesium Ingot	153.00	148.00	12/ 9/85
Nickel (LME)	177.93	177.45	7/28/86
Zinc	41.00-44.00	41.00	7/ 1/86

ALUMINUM: Avg. for last week & previous week. COPPER (C) = cathode; LEAD: common grade. MAGNESIUM: 99.8% pig, delivered. NICKEL: Avg. for last week & previous week. ZINC: high grade.

Antimony, American Laredo, Texas	$2.00
Beryllium-aluminum 5% Be, per lb. contained Be	$248.00
Beryllium-copper, per lb. cont. Be	$144.00
Beryllium 97% powder 200	$197.00
Cadmium, ton lots	$1.00
Calcium, ton lots, crown	$3.92
Chromium, 99.5% electro	$4.62
Cobalt, 99%, cathode	$11.70
Gold per troy oz.	$353.60
Indium, dollars per troy oz.	$2.65
Iridium, dollars per troy oz.	$415.00
Magnesium sticks, 10,000 lbs.	$2.02
Mercury, per 76-lb., f.o.b. N.Y.	$230.00-250.00
Molybdenum, lb. tech. moly oxides, 20 lb. MO can	$3.25
Palladium, per troy oz.	$112.00
Platinum, per troy oz.	$445.00
Rhodium, per troy oz.	$1,160.00
Silver ingots, per troy oz.	$5.025
Titanium sponge, melt grade	$3.40-3.55
Tungsten powder, hyd red.	$9.50-9.85
Vanadium	$6.00
Zirconium sponge	$12.00-17.00

(Per lb. unless otherwise noted)

Straits Tin Price

(U.S. cents per lb. EX-SMELTER, based on daily market in Kuala Lumpur in Malaysian dollars per kilo.)

July 21—243.94
July 22—241.67
July 23—242.29
July 24—243.43
July 25—244.74

Scrap Prices
Brass Mill Scrap

(Cents per lb; over 20,000 lbs. add 1¢ per lb)

	Solids	Turnings
Copper	58	51
Yellow brass	50	46½
Red brass	53	48
Comm. bronze	54	48¼
Mang. bronze	42	41
Free cutting rod ends	49	48

Custom Smelters Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	55
No. 2 copper wire	47
Light copper	38

Ingot Makers Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	51
No. 2 copper wire	43
Light copper	34
No. 1 composition	45
No. 1 comp. turnings	44
Hvy. yellow brass solids	30
Hvy. yellow brass turnings	26
Radiators	35

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Aluminum

Segregated clippings	28	— 29
Mixed I.C. clips	26	— 27
Old sheets and cast	23	— 24
Borings and turnings	20	— 21
Duraluminum clippings	24	— 25

Copper and Brass

No. 1 copper wire	47	— 49
No. 2 copper wire	38	— 39
Light copper	32	— 34
Radiators	27	— 28
No. 1 composition	38	— 39
No. 1 composition turnings	35	— 36
Cocks and faucets	28	— 29
Clean heavy yellow brass	27	— 28
Brass Pipe	28	— 29
New soft brass clippings	38	— 40

Lead

Heavy soft lead	5	— 7
Whole batteries	1	— 3
Type metal	15	— 17
Electrotype	13	— 14

Nickel

Nickel solids	110	—120
Nickel rod ends	110	—120
Nickel sheets, clips	110	—120
Nickel turnings	25	— 35

Zinc

New zinc clippings	16	— 17
Old diecast zinc	12	— 13

EFFECTIVE JULY 28, 1986

(Effective July 28, 1986) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated. Prices are the opinions of *Iron Age* editors and correspondents, based on contacts with dealers, brokers, generators and users in the industry on the effective date listed above.

Ferrous Scrap Prices

Pittsburgh

No. 1 hvy. melting	$ 72.00 to	$ 73.00
No. 2 hvy. melting	62.00 to	63.00
No. 1 dealer bundles	87.00 to	88.00
No. 1 factory bundles (auto)	90.00 to	91.00
No. 2 bundles	46.00 to	47.00
No. 1 busheling	83.00 to	84.00
Machine shop turnings	8.00 to	9.00
Shoveling turnings	44.00 to	45.00
Cast iron borings	43.00 to	44.00
Low phos. punchings plate	101.00 to	102.00
Heavy turnings	62.00 to	63.00
No. 1 RR hvy. melting	84.00 to	85.00
Rails, 2 ft. and under	95.00 to	96.00
Scrap rails, random lgth.	82.00 to	83.00
RR specialties	95.00 to	96.00
No. 1 machinery cast	74.00 to	75.00
Cupola cast	67.00 to	68.00
Heavy breakable cast	30.00 to	31.00
Stainless		
18-8 bundles and solids	510.00 to	515.00
18-8 turnings	410.00 to	415.00

Chicago

No. 1 hvy. melting	$ 71.00 to	$ 72.00
No. 2 hvy. melting	67.00 to	68.00
No. 1 dealer bundles	84.00 to	85.00
No. 1 factory bundles (auto)	84.00 to	85.00
No. 2 dealer bundles	56.00 to	57.00
No. 1 busheling	78.00 to	79.00
Shredder scrap	78.00 to	79.00
Machine shop turnings	27.00 to	28.00
Mixed borings and turnings	22.00 to	23.00
Shoveling turnings	29.00 to	30.00
Cast iron borings	41.00 to	42.00
Low phos. forge crop	97.00 to	98.00
Low phos. punchings plate 1/4 in. and heavier	112.00 to	113.00
Low phos. 2 ft. and under	106.00 to	107.00
No. 1 RR hvy. melting	75.00 to	76.00
Scrap rails random lgth.	79.00 to	80.00
Rerailer rails	104.00 to	105.00
Rails, 2 ft. and under	99.00 to	100.00
RR couplers and knuckles	90.00 to	91.00
RR car axles	106.00 to	107.00
No. 1 machinery cast	105.00 to	106.00
Cupola cast	92.00 to	93.00
Stove plate	97.00 to	98.00
Steel car wheels	87.00 to	88.00
Stainless		
18-8 bundles and solids	485.00 to	495.00
18-8 turnings	400.00 to	410.00
430 bundles and solids	125.00 to	135.00
430 turnings	85.00 to	95.00

Philadelphia

No. 1 hvy. melting	$ 71.00 to	$ 74.00
No. 2 hvy. melting	63.00 to	66.00
No. 1 dealer bundles	84.00 to	87.00
No. 2 dealer bundles	53.00 to	56.00
No. 1 busheling	83.00 to	86.00
Shredder scrap	83.00 to	86.00
Machine shop turnings	24.00 to	27.00
Mixed borings and turnings	24.00 to	27.00
Shoveling turnings	39.00 to	42.00
Low phos. 5 ft. and under	77.00 to	80.00
Low phos. 2 ft. punchings	93.00 to	96.00
Electric furnace bundles	85.00 to	88.00
RR specialties	76.00 to	79.00
Rails, 2 ft. and under	96.00 to	99.00
Cupola cast	85.00 to	88.00
Heavy breakable cast	53.00 to	56.00
No. 1 machinery cast	92.00 to	95.00

Detroit

Brokers buying prices per gross ton on cars:		
No. 1 hvy. melting	$ 54.00 to	$ 55.00
No. 2 hvy. melting	53.00 to	54.00
No. 1 dealer bundles	67.00 to	68.00
No. 2 bundles	33.00 to	34.00
No. 1 busheling	65.00 to	66.00
Drop forge flashings	42.00 to	43.00
Machine shop turnings	28.00 to	29.00
Mixed borings and turnings	8.00 to	9.00
Shoveling turnings	28.00 to	29.00
Cast iron borings	21.00 to	22.00
Heavy breakable cast	32.00 to	33.00
Mixed cupola cast	47.00 to	48.00
Automobile cast	71.00 to	72.00
Stainless		
18-8 bundles and solids	470.00 to	480.00
18-8 turnings	340.00 to	350.00
430 bundles and solids	115.00 to	125.00

Youngstown

Brokers buying prices per gross ton on cars:		
No. 1 hvy. melting	$ 56.00 to	$ 57.00
No. 2 hvy. melting	54.00 to	55.00
No. 1 dealer bundles	72.00 to	73.00
No. 2 dealer bundles	32.00 to	33.00
Machine shop turnings	20.00 to	21.00
Shoveling turnings	20.00 to	21.00
Low phos. plate	71.00 to	72.00
Electric furnace bundles	60.00 to	61.00
Galvanized bundles	58.00 to	59.00

Cleveland

Brokers buying prices per gross ton on cars:		
No. 1 hvy. melting	$ 54.00 to	$ 55.00
No. 2 hvy. melting	52.00 to	53.00
No. 1 dealer bundles	76.00 to	77.00
No. 1 factory bundles	75.00 to	76.00
No. 2 bundles	30.00 to	31.00
No. 1 busheling	66.00 to	67.00
Machine shop turnings	20.00 to	21.00
Shoveling turnings	20.00 to	21.00
Cast iron borings	18.00 to	19.00
Cut structural & plates, 5 ft. and under	67.00 to	68.00
Cut structural & plates, 2 ft. and under	88.00 to	89.00
Low phos. punchings plate	88.00 to	89.00
Foundry steel, 2 ft. & under	53.00 to	54.00
No. 1 RR hvy. melting	59.00 to	60.00
Rails, 2 ft. and under	88.00 to	89.00
Rails, 18 in. and under	90.00 to	91.00
No. 1 machinery cast	79.00 to	80.00
Mixed cast	46.00 to	47.00
Stainless		
18-8 bundles	470.00 to	480.00
18-8 turnings	345.00 to	355.00
430 bundles	120.00 to	130.00

Buffalo

Brokers buying prices per gross ton on cars:		
No. 1 hvy. melting	$ 51.00 to	$ 52.00
No. 2 hvy. melting	41.00 to	42.00
No. 1 busheling	68.00 to	69.00
No. 1 dealer bundles	68.00 to	69.00
No. 2 bundles	29.00 to	30.00
Machine shop turnings	13.00 to	14.00
Mixed boring and turnings	13.00 to	14.00
Shoveling turnings	19.00 to	20.00
Cast iron borings	23.00 to	24.00
Low phos. plate	76.00 to	77.00
Structural and plate, 2 ft. and under	77.00 to	78.00
Rails, 2 ft. and under	75.00 to	76.00
Scrap rails, random lgth.	61.00 to	62.00
No. 1 machinery cast	74.00 to	75.00
No. 1 cupola cast	71.00 to	72.00

St. Louis

No. 1 hvy. melting	$ 69.00 to	$ 70.00
No. 2 hvy. melting	52.00 to	53.00
No. 1 busheling	79.00 to	80.00
No. 1 dealer bundles	79.00 to	80.00
No. 2 bundles	46.00 to	47.00
Machine shop turnings	17.00 to	18.00
Shoveling turnings	21.00 to	22.00
Cast iron borings	27.00 to	28.00
No. 1 RR hvy. melting	74.00 to	75.00
Rails, random length	74.00 to	75.00
Rails, 18 in. and under	97.00 to	98.00
RR specialties	74.00 to	75.00
Cupola cast	69.00 to	70.00
Heavy breakable cast	43.00 to	44.00
Stove plate	89.00 to	90.00
Steel car wheels	78.00 to	79.00
Rerolling rails	99.00 to	100.00
Unstripped motor blocks	54.00 to	55.00

Birmingham

No. 1 hvy. melting	$ 68.00 to	$ 69.00
No. 2 hvy. melting	64.00 to	65.00
No. 1 dealer bundles	68.00 to	69.00
No. 2 bundles	44.00 to	45.00
No. 1 busheling	68.00 to	69.00
Shredder scrap	86.00 to	87.00
Machine shop turnings	23.00 to	24.00
Shoveling turnings	36.00 to	37.00
Cast iron borings	36.00 to	37.00
Electric furnace bundles	65.00 to	66.00
Elec. furnace, 3 ft. & under	68.00 to	69.00
Structural and plate, 2 ft.	87.00 to	88.00
Structural and plate, 4 ft.	81.00 to	82.00
No. 1 RR hvy. melting	81.00 to	82.00
Scrap rails, random lgth.	70.00 to	71.00
Rails, 2 ft. and under	85.00 to	86.00
Angles and splice bars	81.00 to	82.00
No. 1 cupola cast	82.00 to	83.00
Unstripped motor blocks	72.00 to	73.00

Cincinnati

Brokers buying prices per gross ton on cars:		
No. 1 hvy. melting	$ 50.00 to	$ 51.00
No. 2 hvy. melting	49.00 to	50.00
No. 1 dealer bundles	69.00 to	70.00
No. 2 bundles	32.00 to	33.00
Machine shop turnings	9.00 to	10.00
Shoveling turnings	12.00 to	13.00
Cast iron borings	19.00 to	20.00
Low phos. 18 in. and under	75.00 to	76.00
Rails, random length	59.00 to	60.00
Rails, 2 ft. and under	75.00 to	76.00
No. 1 cupola cast	64.00 to	65.00
Heavy breakable cast	25.00 to	26.00
Drop broken cast	68.00 to	69.00

New York

Brokers buying prices per gross ton on cars:		
No. 1 hvy. melting	$ 40.00 to	$ 42.00
No. 2 hvy. melting	33.00 to	34.00
No. 2 dealer bundles	20.00 to	24.00
Mixed borings and turnings	10.00 to	11.00
Machine shop turnings	4.00 to	6.00
Shoveling turnings	10.00 to	12.00
Clean cast, chem. borings	35.00 to	36.00
No. 1 machinery cast	79.00 to	80.00
Mixed yard cast	50.00 to	51.00
Heavy breakable cast	10.00 to	12.00
Stainless		
18-8 prepared solids	440.00 to	460.00
18-8 turnings	340.00 to	360.00
430 prepared solids	90.00 to	100.00
410 solids	75.00 to	85.00

Boston

Brokers buying prices per gross ton on cars:		
No. 1 hvy. melting	$ 49.00 to	$ 51.00
No. 2 hvy. melting	39.00 to	41.00
No. 1 dealer bundles	50.00 to	52.00
No. 2 bundles	32.00 to	34.00
No. 1 busheling	56.00 to	58.00
Shredder scrap	59.00 to	61.00
Machine shop turnings	12.00 to	14.00
Shoveling turnings	18.00 to	20.00
No. 1 machinery cast	72.00 to	77.00
Mixed cupola cast	44.00 to	46.00
Heavy breakable cast	8.00 to	10.00

San Francisco

No. 1 hvy. melting	$ 40.00 to	$ 42.00
No. 2 hvy. melting	34.00 to	36.00
No. 1 dealer bundles	31.00 to	33.00
No. 2 dealer bundles	20.00 to	21.00
Machine shop turnings	8.00 to	9.00
Cast iron borings	8.00 to	9.00
No. 1 cupola cast	80.00 to	82.00

Los Angeles

No. 1 hvy. melting	$ 34.00 to	$ 36.00
No. 2 hvy. melting	28.00 to	30.00
No. 1 dealer bundles	26.00 to	28.00
No. 2 dealer bundles	16.00 to	18.00
Machine shop turnings	9.00 to	10.00
Shoveling turnings	10.00 to	11.00
Cast iron borings	8.00 to	9.00
Elec. furnace, 1 ft. and under (foundry)	67.00 to	69.00
No. 1 cupola cast	72.00 to	74.00

Seattle

No. 1 hvy. melting	60.00 to	62.00
No. 2 hvy. melting	51.00 to	53.00
No. 2 bundles	35.00 to	37.00
No. 1 cupola cast	89.00 to	90.00
Mixed yard cast	80.00 to	82.00

Hamilton, Ont.

Brokers buying prices per gross ton on cars:	
No. 1 hvy. melting	$ 76.00
No. 2 hvy. melting, cut 2 ft. and under	67.00
No. 1 dealer bundles	82.00
No. 2 bundles	58.00
Mixed steel scrap	53.00
Bush. new fact. prep'd	77.00
Bush. new fact. unprp'd	60.00
Machine shop turnings	30.00
Short steel turnings	30.00
Mixed borings and turnings	19.00
Cast scrap	97.00

Houston

Brokers buying prices per gross ton on cars:		
No. 1 hvy. melting	$ 59.00 to	$ 60.00
No. 2 hvy. melting	49.00 to	50.00
No. 2 bundles	33.00 to	34.00
Machine shop turnings	11.00 to	12.00
Crushed turnings	24.00 to	25.00
Shredder scrap	67.00 to	68.00
Cut structural plate, 2 ft. and under	91.00 to	92.00
Cut structural plate, 5 ft. and under	67.00 to	68.00
Unstripped motor blocks	54.00 to	55.00
Cupola cast	81.00 to	82.00

PRICES CONTINUE ON A TRIP TO NOWHERE

Prices are supposed to go up or down. But in June, prices of producer goods simply stalled. During the month, the U.S. Labor Dept.'s price index showed an aggregate 'no change.'

That was the first zero-change reading in the 12-month period that ended at the close of June. During that period, prices of producers finished goods went up six times and down six times.

Noted Labor Dept. analysts in the June price report: "In the first half of 1986, prices received by domestic producers of goods at all stages of processing declined at rates not experienced since 1949."

The analysts went on to note that the producer price index for finished goods decreased at an annual rate of 6.5 pct in the first half. Prices for intermediate goods decreased at a rate of 8.3 pct and prices of crude materials moved down at a seasonally adjusted annual rate of 20.9 pct.

The big price suppressor in that first half, of course, was tumbling energy prices. Big cuts in those tags pulled down all the averages.

Prices of capital goods, despite the slump in industries making those goods, have lately held their ground. Over the last five months ending in June, tags on capital goods have gone up steadily, if moderately.

Price softness in metalworking industry products was widespread in June—as it has been since the start of the year. For example, note in the table here under price changes from May to June, seven product lines scored price declines. Another three lines showed no price changes. And among those product lines showing price hikes, in eight of those lines the price changes were less than 0.2 pct.

Latest Month Covered: June 1986

Products	Index Reading For Month (1967 = 100)	Pct Change From Previous Month	Pct Change From Year-Ago Month
Metal Cutting Machine Tools	403.1	+ 0.7	+ 1.5
Metal Forming Machine Tools	439.6	+ 0.2	+ 1.4
Agricultural Machinery & Equip.	339.9	+ 0.1	+ 0.4
Construction Machinery & Equip.	366.9	+ 0.2	+ 1.4
Oil and Gas Field Machinery	418.3	− 1.3	− 1.8
Industrial Material Handling Equip.	295.9	− 0.2	+ 0.3
Pumps, Compressors & Allied Equip.	361.1	+ 0.4	+ 1.3
Mining Machinery & Equipment	381.0	+ 0.3	+ 0.3
Mechanical Power Transmission Equip.	343.6	+ 0.1	+ 1.1
Automobiles	232.9	− 0.2	+ 1.8
Motor Trucks—Light	311.1	− 0.6	+ 6.0
Motor Trucks—Heavy	342.8	− 0.3	+ 2.9
Railroad Equipment	364.5	0	+ 0.2
Fabricated Metal Structural Products	315.6	+ 0.2	+ 0.3
Electric Motors	349.6	− 0.6	− 0.7
Valves & Fittings (Dec. 1982 = 100)	106.6	0	+ 1.6
Ball & Roller Bearings	356.0	+ 0.1	+ 1.0
Foundry & Forge Shop Products	364.5	− 0.1	+ 0.2
Heating Equipment	269.7	+ 1.1	+ 3.9
Plumbing Fixtures & Brass Fittings	324.2	+ 0.4	+ 3.6
Metal Containers	361.0	0	0
Internal Combustion Engines	353.3	+ 0.2	+ 1.8

Data based on U.S. Labor Dept.'s Producer Price Index